APPENDIX C

SAMPLE TRANSITION PLAN FOR COMMERCIALIZATION

Introduction

A product development life cycle includes several phases; these phases equate roughly to the phases in the SBIR program:

- Phase I – In this phase, the idea or concept undergoes a development process and pre-testing to determine its' feasibility. It is usually a paper study and explores how the product can meet the requirements in the SBIR solicitation, why it is an improvement over other products or technologies, and how it can be brought to reality.
- Phase II – At this point, the idea or concept has been determined to be feasible and the paper concept must be converted to a physical prototype. It includes sufficient laboratory evaluations and/or tests of the prototype to determine not only the engineering feasibility of the product or technology, but its' producibility.
- Phase III – The ability to achieve full scale production and fielding of the product or technology is the key to success in this phase.

Each of these phases requires a thorough understanding of the product development life cycle and the steps required in each phase to reach the ultimate goal of a product or technology that meets all the requirements of the original SBIR solicitation cost effectively. The goal of the TEAM SBIR program is to insure that as many products and technologies as possible achieve Phase III successfully. The Transition Plan for Commercialization provided with Phase II will go a long way in demonstrating that the small business understands every step required to achieve that goal and that it has the resources necessary to implement the plan. Successful completion of the steps in the transition plan, can be used by the sponsor to measure progress before exercising the Phase II option.

Product/Technology Description

This section of the plan should provide a detailed description of the product or technology which will result from the Phase II proposal. First and foremost, the small business must identify the benefits to naval aviation. The description should concentrate on how the product/technology will meet the requirements identified in the Phase I solicitation and more importantly, it should include information obtained in subsequent meetings with the sponsor. The sponsor will be the initial customer for the product or technology and is the **key.** To be successful, any product or technology commercialization must identify and **understand** exactly what it is the **customer needs** and **meet those needs**. Detailed sponsor discussions at this point allow the small business to clarify and refine the conceptual and functional design of the product to meet all customer desires. This dialog must continue throughout development of the Phase II prototype to insure customer support for Phase III production.

When outlining the specific information on the benefits to naval aviation provided by this product or technology, the small business should identify both the tangible and intangible benefits. The tangible benefits should be quantified where possible in terms such as cost savings from reduced manpower or maintenance requirements. The intangible benefits should be measured in terms of performance improvements or enhancements. An analysis of the competitive advantage or advantages the product will produce in the market place should also be presented.

Business Analysis/Marketing

This section should provide the company's business development plans. It is a detailed elaboration of the information provided in the initial summary plan. The following are some of the questions that should be addressed; they are not meant to be all encompassing:

- With the competitive advantages identified in the previous section, can the company identify a market for the product or technology in the private sector?
- If there is a competitive advantage, will it be a short or long term advantage?
- Who are the potential customers and how large is the potential market? Is there a market for the product in the private sector?
- How will the company bring the product/technology to market?
- If the company does not have an internal marketing organization, how will it accomplish these tasks?
- How much will the product/technology cost to manufacture?
- Can the product/technology be priced to yield a profit within a reasonable payback period in order to provide an adequate return on the company's investment?

This section must look at more than just the simple sale of the product/technology to the government sponsor. Identifying potential sales to the private sector would help offset the initial research and development costs and required investment in plant and equipment, materials and other items necessary to produce the product. Without these additional production quantities, the volume required by the sponsor may not be large enough and/or the program long enough to allow the small business to manufacture it economically. Small quantities may have to be priced out of the reach of the government sponsor if there is no private sector market for the product. The small business must also take a realistic look at whether or not the new product fits within the company product line and experience. For example, a paint manufacturer may not have the engineering, manufacturing, or marketing expertise to bring a new computer to market. This may seem like a far-fetched example, but it is equally applicable to "hi-tech" companies. Does the small business have the capability to implement a plan that will not only complete the development and testing of the product, but also addresses the full scale manufacturing and distribution of the product. If plans include licensing, what role will the small business play?

The small business should also provide information on the resources required for completing Phase II and accomplishing Phase III. These resources include the financial, personnel, and facility requirements to manufacture and test the product/technology prototype and what is required to achieve full-scale production. This section should include the corporate organizational structure and who will be responsible for managing the accomplishment of required tasks. The small business must also demonstrate that it has more than just an "idea." It must be able to demonstrate its capability to support this "idea" over the entire product life cycle, either by itself or through others.

The biggest problem the small business will encounter is in the development of reliable sales and cost information to support the business analysis. The forecast of sales revenue and volume is the foundation on which the business plan is developed. Failure to correctly forecast these data can lead to insufficient funding available to manufacture and distribute the product.

Product Development

This section of the plan should describe how the prototype/technology is going to be produced/manufactured. This is typically referred to as the "make or buy" decision and involves the careful analysis of several issues. The small business must address the issues listed below and demonstrate in the plan how they will be resolved:

- Relative costs of making or buying?
- Extent to which specialized machinery, supplies, and production resources (e.g., labor) are needed.
- Whether the company has sufficient production capacity?
- If there is not sufficient manufacturing capability in house, will the product or technology be licensed or will the small business enter into a partnership with another company? If the product or technology is licensed, how will proprietary or trade secrets be protected?

- Is the product or technology so innovative and cutting edge that it must be manufactured in house?
- Will the product or technology be assembled from off-the-shelf components? What are the supplier relationships?
- How will the small business control and or manage risk (technical risk, cost risk, and production risk)?
- How and who will test the prototype? Who will write the test plan? Will there be a developmental test and evaluation followed by an operational test and evaluation?
- Will development of test plans be coordinated with the customer? Will the criteria for acceptance be agreed upon to insure the product meets customer requirements?
- Will there be low rate initial production, or full-scale production?
- How much management oversight is required and does the small business have managers with the appropriate experience?
- Finally, will the small business distribute the finished products through its own resources or via distributors and wholesalers?

Plan of Action and Milestones

The following POA&M is not intended to be all inclusive. It is representative of the tasks and timing which are involved in transitioning a product or technology from concept development to full scale production and commercial sale and use.

Task Name	2000 Qtr 3	Qtr 1	Qtr 3	Qtr 1	Qtr 3	Qtr 1	Qtr 3
Phase II Award Notification							
Meet w/Customer ID Requirements							
Establish Recurring Customer Dialog							
Busines Analysis/Marketing							
Survey Competition							
Identify Competitive Advantage							
Company							
Product							
Identify Private Sector Customers							
Define the Market							
Identify Manufacturing Requirements							
Plant and Equipment							
Labor and Training							
Materials							
Distribution							
Develop Costing/Pricing							
Identify Funding Requirements and Sources							
Make or Buy Analysis							
Write Business Plan							
Product Development							
Incorporate Design Changes							
Procure/Upgrade Required Plant and Equipment							
Procure Materials							
Fabricate Prototype							
Developmental Testing							
Incorporate Changes							
Begin LRIP							
Production Testing							
Begin Full Production							